MARSHALL STAR

Marshall Space Flight Center — April 8, 1999

'We bring people to space — We bring space to people'

During weeklong Marshall/AIAA workshop

Experts showcase advanced propulsion research

by Deana Nunley

Propulsion systems that get their oomph from lasers, antimatter and other unconventional energy sources were discussed when space transportation experts gathered here this week.

NASA and the American Institute of Aeronautics and Astronautics held the 10th Annual Advanced Propulsion Research Workshop Monday through today at the Bevill Conference Center. Marshall Center and the Jet Propulsion Laboratory in Pasadena, Calif., co-hosted the event, which was held in Pasadena in past years.

The opening speaker at this year's conference was Homer Hickam, a retired Marshall engineer whose life is portrayed in the hit movie "October Sky." The movie is based on Hickam's best-selling memoir, "Rocket Boys."

Center Director Art Stephenson was the keynote speaker. Stephenson discussed advanced propulsion research at Marshall, NASA's Lead Center for Space Transportation Systems Development.

The workshop provided a forum for advanced space propulsion researchers worldwide to exchange information and coordinate research and development efforts. Conference sessions covered a wide range of advanced propulsion technologies that are transforming science fiction to scientific fact, including:

Photo by Terry Leibold

Dr. George Schmidt, chief of the Marshall Propulsion Research and Technology Division, registers for the 10th Advanced Space Propulsion Workshop at the Bevill Center.

Beamed energy propulsion, such as launching rockets to space on laser beams.

See Propulsion Workshop on page 7

Marshall team finds Atlanta influences its own weather

by Gay Watson

Atlanta's urban expansion and its heating effects actually can influence the area's weather, according to a study led by Marshall scientists.

The three-year analysis of Atlanta's land-use temperature and air-quality found that large urban areas like Atlanta are warmed to create their own "heat islands." The heat islands are created by removal of trees, addition of tall buildings and paving of land. During the day, dark materials like asphalt and roofing absorb heat and hold it long after the Sun sets, maintaining higher temperatures than rural areas.

During the study, researchers examined a one-month period in July 1996 when temperatures averaged 8-10 degrees Fahrenheit higher in the urban Atlanta area than in the outlying rural areas. According to researchers, that temperature difference created localized weather effects, causing at least six thunderstorms during that month.

Led by Marshall's Dr. Dale Quattrochi and Dr. Jeffrey Luvall, the study found when Atlanta heats up during the day, a surface thermal low air pressure dome is created, then the low pressure causes cool air to be pulled in from surrounding areas. The resulting wind convergence creates an upward flow motion, pushing up the hot air to trigger thunderstorms.

The scientists also found the higher temperatures double the occurrence of the chemical reaction that creates ozone, a major contributor to smog. Atlanta has the longest average commute of any metropolitan area, 34 miles.

The complete study findings were presented by team members March 24 at a meeting of the Association of American Geographers in Honolulu, Hawaii.

Researchers from four major universities assisted NASA Earth scientists in the Atlanta study. The weather patterns were discovered by team members Robert Bornstein and Qing Lu Lin, both meteorologists at San Jose State University in San Jose, Calif.

Robert Gillies, a geographer at Utah State University in Logan City, used

See Atlanta on page 4

"Safety — It's your future "
— Safety slogan submitted by
Talmage Reynolds, AM01

Standardized processes and tools are motives for Marshall's new Systems Management Office

Editor's Note: *This is the final in a series of articles about the Marshall reorganization announced Jan. 29 by Center Director Art Stephenson.*

by Mike Wright

Developing and implementing standard processes and tools for systems engineering and cost analysis are the reasons for establishing Marshall's new Systems Management Office, says Marshall's Bill Kilpatrick.

Kilpatrick served as leader of a team of 16 representatives from across the Center assigned to structure the new office as part of Marshall's reorganization. "I give a lot of credit to the team for the skill they demonstrated in shaping the role this office will play," he said.

"The Systems Management Office is a brand new group at the Center. It's an organization I believe NASA may replicate at other field Centers," Kilpatrick said.

The initiative for establishing the office came from NASA Administrator Dan Goldin and his staff, Kilpatrick said. "Mr. Goldin wanted to know how NASA can improve program and project management as it relates to systems engineering."

Kilpatrick said the Independent Program Assessment Office at NASA's Langley Research Center, Va., independently evaluates potential projects for NASA. "So the NASA Administrator wanted the group at Langley to look at how the NASA field Centers could implement a similar function."

The opportunity came when Marshall Director Art Stephenson asked NASA Headquarters to review Marshall's draft reorganization plan. "The plan was basically accepted without change with one exception. Mr. Goldin wanted a Systems Management Office to be included," Kilpatrick said.

As part of the reorganization plan, systems engineering will be co-located within the projects that Marshall is assigned to manage.

"One of the challenges I was given was to find the best systems engineers at the Center and make them part of this office," Kilpatrick said. "I believe we have accomplished that. These people are very excited about the challenge to help make projects here at Marshall even better than they are today."

Photo by Adeline Byford

Bill Kilpatrick discusses plans for the new Systems Management Office.

See Systems Managment on page 5

Teledyne Brown lauded for 1M hours without lost-time accident

Teledyne Brown Engineering, which holds the contract to provide propellants, pressurants and calibration services at Marshall, was recognized at a luncheon last week for achieving the goal of working 1 million hours without a lost time accident. Its last accident was in February 1992.

Center Director Art Stephenson and Safety Director Amanda Goodson presented a commemorative plaque to Mitchell Britt, project manager for the contract. Also attending were Teledyne Brown President Richard Holloway, and Marty Runkle, aerospace programs vice president. Teledyne Brown and its subcontractors, Simco and Engineering Research Consulting, Inc. in the Calibration Laboratory, and Sigmatech in the Valve and Component Shop, have an outstanding safety performance record at Marshall.

Britt said this accomplishment is worthy of recognition, especially since the nature of much of the work assignment is potentially hazardous. The transportation and processing of high

Photo by Adline Byford

Teledyne Brown employees celebrate one-million hours worked without a lost-time accident.

See Teledyne Brown on page 7

6th Great Moonbuggy Race to test engineering skills

by Gay Watson

Almost 30 years ago, the first lunar roving vehicle was designed and tested at Marshall, for its Apollo 15 mission to the Moon. Huntsville will again be the proving ground for "moon buggies" Saturday, April 17, when 32 teams of high school and college students gather to compete in the Sixth Annual Great Moonbuggy Race.

Photo by Dennis Keim

High school students race their moon buggy at the U.S. Space & Rocket Center.

The daylong competition begins at 8:30 a.m. at the U.S. Space & Rocket Center.

The race challenges students to design and build a human-powered, test-model vehicle to address engineering problems similar to those faced by the original Marshall Center lunar rover team.

Prizes are awarded for quickest speed in assembly and navigating the obstacle course, and for design and originality of concept. The entrants represent seven high schools and 16 universities, spanning the United States, including Puerto Rico. Competing teams are from Arizona State University in Tempe; Cameron University in Lawton, Okla.; Florida Institute of Technology in Melbourne; North Dakota State University in Fargo; Ozarks Technical College in Springfield, Mo.; Pittsburg State University in Pittsburg, Kan.; Purdue University in Indianapolis, Ind.; South Carolina State University in Orangeburg; Southern Illinois University in Carbondale; Southwest Missouri State University in Springfield; College of New Jersey in Ewing; University of California in Santa Barbara; University of Evansville in Evansville, Ind.; University of Puerto Rico in Humacao; University of South Alabama in Mobile; and University of Tennessee in Knoxville.

High school teams will represent Autauga County Technology Center in Prattville, Ala.; Decatur Heritage Christian Academy in Decatur, Ala.; Eastlake High School in Chula Vista, Calif.; Graff Career Center in Springfield, Mo.; Monterey High School in Monterey, La.; Norwood High School in Norwood, Ohio; and Spring Valley High School in Columbia, S.C.

The writer, a contractor employed by ASRI, supports the Media Relations Office.

Tornado drill pinpoints problem areas needing corrective action

During the statewide tornado drill held Feb. 24, Marshall's safety monitors identified several incidents that require corrective action by Marshall employees and on-site contractors.

Safety of employees is our number one concern," said Joyce Davis, Marshall's emergency preparedness coordinator. "This is the reason for drills. It is extremely important for employees to be intimately familiar with what to do and where to go when evacuation announcements are made.

"Tornadoes can strike in an instant providing little to no warning," said Davis. "Sometimes seconds count and people should automatically know what to do. Practice for this event is not unlike practice for any other event. However, it should be taken more seriously because lives could be at stake."

The incidents and the solutions are listed below. Employees are encouraged to read them carefully and comply with instructions in order for the Center to improve its emergency preparedness.

- Employees are slow to evacuate. If you are in a meeting or on the telephone when the safety monitor asks you to evacuate, do so immediately. During an actual severe weather evacuation you

See Tornado Drill on page 6

Photo by Terry Leibold

Congressional staff members visit Marshall

Jim Bilbro, special assistant for Optics at Marshall, gives a presentation on space optics manufacturing to congressional staff members March 30. The staff members represent the Senate Appropriations Subcommittee, the House VA/HUD Appropriations Subcommittee and the House Science Committee.

Centerwide Administrative Support Contract awarded

by the Human Resources Office

Marshall recently awarded a Centerwide Administrative Support Contract to Infinity Technology Inc. The performance-based contract will provide a variety of administrative and clerical support services to organizations in the following areas:

Data Processing — Word processing functions, presentation graphics, scheduling, spreadsheets, routine window applications, etc.

Messaging — Receiving telephone messages, or receiving, screening or escorting visitors, etc.

TDY Travel Support — Preparation of TDY orders and vouchers, including obtaining signatures, etc.

Official Files/Records Maintenance — Reviewing and maintaining files and records in accordance with established guidelines.

Incoming Mail/Reports Distribution — Receiving, sorting, opening, distributing, pick-up and delivery of organization level mail and handcarry services.

General Administrative Services — Includes accounting clerical, library clerical, telecommunications clerical, office meeting support, class room support, security clerical and writing support.

Any services provided as a result of the contract should not be confused with other existing contracts or personal services functions performed by management support assistants or executive support assistants.

Questions concerning the Centerwide Administrative Services contract operations should be addressed to Vicky Crawford at 4-7514, or Camille Velvet at 4-7520.

Photo by Dennis Olive

Centerwide Administrative Support contracting officer Marena McClure, center, discusses new administrative and clerical support services with Infinity Technology Inc. employees Lynetta Davis, left, and Joan Muhammad.

Marshall Association membership drive under way

The Marshall Association is accepting new members for the 1999 season. Marshall civil service employees, managers and retirees are encouraged to join the Association.

"The Association provides an opportunity to interact with fellow employees in a casual setting," said Association President Dave Carstens. "At each meeting, we hear a stimulating, challenging speaker. We also enjoy good food and fellowship."

Dues are $25, payable to any of the 1999 officers: Carstens; Terry Mitchell, vice president for promotions; Bob McBrayer, vice president for programs; or Efrem Hanson, treasurer. Annual dues fund scholarships for Marshall dependents and support the speaker program.

The next meeting will be Thursday, April 15 at 11:30 a.m. at the Rustic Lodge. Huntsville Mayor Loretta Spencer will speak. Reservations for the meeting should be made by e-mail to Efrem Hanson by April 13. Cost of the lunch is $7 for members or $8 for nonmembers. Directions to the Rustic Lodge can be obtained from Efrem Hanson at 544-6340.

Atlanta

Continued from page 1

satellite data from an instrument aboard a National Oceanic and Atmospheric Administration satellite to map the heat coming off Atlanta's urban area. The study included a 17-square mile intense hot zone in Atlanta's central business district.

The Atlanta area's population growth was investigated by geographers Chor-Pang Lo and Xiojun Yang of the University of Georgia in Athens. By studying aerial and satellite photos, they tracked vegetation loss and construction increases since 1973.

Between 1973 and 1998, 350,000 acres of forest have been replaced mainly by suburbs, according to their findings. Low-density residential areas —mainly single-family homes — have doubled to almost 670,000 acres.

Meteorologists Stanley Kidder and Jan Hafner of Colorado State University in Fort Collins are using Geostationary Operational Environmental Satellite and Landsat data to study how cloud cover tends to decrease ozone production by blocking sunlight and cooling the ground surface.

The researchers have used their findings to make recommendations for lowering the city's temperature, combating the urban heat island and its potentially harmful side effects.

Quattrochi recommends light colored roads, roofs and parking lots, which would reflect instead of absorbing heat. Replacing trees and vegetation also could significantly lower temperatures.

The study findings have been submitted to the Georgia state legislature for consideration.

The writer, a contractor employed by ASRI, supports the Media Relations Office.

All hands meeting scheduled Friday, April 23 from 8:30-9:30 a.m. in Morris Auditorium

Marshall Activities Center offers exercise programs

by Debra Valine

Want to start an exercise program but don't know where to begin? The NASA Exchange, located in Bldg. 4752, employs two physical exercise program specialists who provide fitness evaluations free of charge to Marshall employees.

Mike Clark, the newest staff member at the Activities Center, and co-worker Pat Mirandy work with Marshall employees who are interested in exercise programs.

Clark, originally from Florence, Ala., holds a master's degree in exercise physiology from Middle Tennessee State University in Murfreesboro, Tenn.

His duties encompass everything from fitness evaluations to oversight of the softball and soccer fields and tennis courts. "We do fitness evaluations on clients coming in," said Clark, also certified in cardiopulmonary resuscitation. "We perform body fat percentage, blood pressure, flexibility and muscular strength and endurance tests to determine the person's base level of fitness.

"We also familiarize clients with our equipment, and set up an exercise program tailored to what an individual wants to accomplish."

Clients include people recovering from injuries or surgery, as well as those who want to tone up and get in shape.

"They come to us with a therapy prescription from their doctor," Clark said. "We work with them based on that recommendation. We are not physical therapists — we do not make diagnoses."

But he can help with their programs based on his personal experience with back, heart and shoulder surgeries. "I have an understanding of what clients are going through when they get into a fitness program because of the surgeries I've had. Sometimes it's hard for them to get started, so I encourage them. Yes, they can exercise — within the limits prescribed by their doctors, of course."

Photo by Danny Reeves

New fitness instructor Mike Clark works with clients such as Martha Farish, front, and Moira Stewart in the exercise facility.

After a client begins an exercise program, Clark and Mirandy monitor the client's progress and make adjustments to the exercise program when needed.

"The old saying 'no pain, no gain' is untrue," said Clark. "We work with our clients so that they start out slowly, doing exercises that do not cause pain or burnout so they will come back."

Clark and Mirandy ask employees to make an appointment. "Making an appointment will ensure each client gets a chance to have all their questions answered without interruption," said Mirandy.

For now, the exercise programs are open only to Marshall employees, but NASA Exchange Manager Carol Wasserman said that may change. "We are working on plans to expand the exercise facilities," she said. "Whenever that happens, we will be able to open up to on-site contractors."

See Exercise Facility on page 7

Systems Management

Continued from page 2

Marshall Deputy Director Carolyn Griner recently chaired a management initiative from NASA Headquarters that calls for standardizing how programs and projects are managed across the Center. "This initiative will provide guidance with some degree of flexibility," Kilpatrick said. "One of the primary objectives of the new office is to assure that projects at the Center are implemented in line with that documentation."

The office also will have a major role in process improvements at Marshall. "We've got to change the way we do business," Kilpatrick said. A Marshall process improvement team has been chartered to examine program and project management. "That team has a cross-section of people from the Center including those from the Systems Management Office. The team will transmit its report to the Systems Management Office once that office officially starts operating in May."

The office will provide a service to Marshall managers as they formulate the projects assigned to them. "We will provide advice and consultation in project planning and a cost estimation service," Kilpatrick said. The estimation service will come from members of the Program Planning Office in the existing Program Development Directorate who will transfer to the Systems Management Office.

Beyond the first level of management, the office will include a Systems Engineering Office and Engineering Cost Office.

Staffing for the Systems Management Office calls for 23 people including those moved from the Program Development Directorate, the existing Science and Engineering Directorate, the Chief Engineers Office and Observatory Projects Office. "I think we are getting a broad spectrum of experience and skills," Kilpatrick said. "I feel people understand what the new office will do, and credit for that belongs to Art Stephenson and Carolyn Griner in terms of how this reorganization was implemented. It was done very openly."

Tornado drill

Continued from page 3

could be putting yourself and the monitor in danger by a slow response.

• Employees attempted to use elevators for evacuation. Elevators are not to be used for evacuation purposes. If your building experiences a power outage, you could be trapped in the elevator. We cannot ask emergency responders to put themselves in danger to travel to your building during severe weather evacuation. If your building is hit by a tornado while you are trapped in an elevator, you could be severely injured or killed.

• Confusion exists regarding protective areas. Emergency plans are posted in all building entrances, elevator lobbies, etc., with protective areas designated in yellow. Employees should be familiar with this plan. The actual areas are also identified by yellow and black "Protective Area" signs hanging from the ceiling, pasted to the walls in hallways or posted to doorframes to indicate rooms to use. In hallways, the first sign is the beginning of the protective area and the last sign is the end of the protective area. Do not congregate under individual signs and ignore the rest of the hallway. If doors to protective areas are locked or have key card entry, security will automatically open these doors when an evacuation is announced over the Emergency Warning System. If an area is not opened, call Security (4-4357/4-HELP) to request the door be opened.

• Employees congregate in stairwells or near the entrance to a protective area. Employees in buildings with basement protective areas should move as far into the area as possible to allow room for incoming employees. Those who stop right at the entrance in an effort to be the first out create a bottleneck, which could prevent other employees from entering and leave them in an unsafe area.

• Employees in Bldg. 4203 basement protective area. Locked Source Evaluation Board areas are designated as protective areas in this building. The doors are automatically opened by a security computer program when an evacuation is announced. A safety monitor or the first employees to enter the area should open these doors so employees can move into them to alleviate the congestion in the basement. If the doors are not opened, call Security, 4-4357 (4-HELP) and request they open the doors.

• Television viewing area in Building 4200. While it may be more comfortable to sit on a sofa than to stand for a period of time, this lobby is not a designated protective area. Move to the correct area.

• Noise level is quite often too loud in protective areas. Employees need to keep the noise level down so that Emergency Warning System announcements or instructions from Safety Monitors can be heard. Individuals in the basement of Building 4202 should especially be concerned with the noise level as it makes it difficult for Emergency Operations Center personnel to monitor the National Warning Service, the Weather Service, local television weather coverage, etc. Walls between the hall and the Emergency Operations Center are not soundproof.

• Employees do not follow instructions of safety monitors. Safety monitors should be wearing an orange identifying armband. If they instruct you to evacuate, move farther into a protective area or move to another area, it is your obligation to do so.

For more information, call Davis at 544-5187.

Obituaries

Campbell, Hugh, 63, Huntsville, died Feb. 2. He retired from Marshall in 1997 where he worked in the Propulsion Laboratory. He is survived by his wife Virginia Campbell.

Dinardi, Vincent, 85, Fort Payne, died Jan. 25. He retired from Marshall in 1975 where he worked as an engineering technician.

Fisher, Paul, 69, Huntsville, died March 23. He retired from Marshall in 1981 where he worked in the Astrionics Laboratory. He is survived by his wife Doris Fisher, three daughters and seven grandchildren.

King, Edgar, 80, Union Grove, died Dec. 27, 1998. He retired from Marshall in 1979 where he worked as a program analyst. He is survived by his sister, Ramona Whisenant.

Kanupp, Phyllis, 63, Huntsville, died March 9. She retired from Marshall in 1975 where she worked as a secretary in the Science and Engineering Directorate. She is survived by her husband Jack Kanupp.

Osburn, Eli, 65, Arab, died Jan. 18. He retired from Marshall in 1994 where he worked as an aerospace engineer. He is survived by his wife Lanita Osburn.

Reavis, Lee, 82, Huntsville, died Feb. 19. He retired from Marshall in 1973 where he worked in the Astrionics Laboratory. He is survived by his wife Ellen Reavis.

Robertson, John, 79, Paint Rock, died March 28. He retired from Marshall in 1974 where he worked as a production controller. He is survived by his wife Jimmie Robertson.

Stone, Walter, 80, Huntsville, died March 14. He retired from Marshall in 1981 where he worked as a research chemist. He is survived by his wife Edna Stone.

Kenneth Walker

Walker, Kenneth, 60, Decatur, died March 31. At the time of his death, he worked as chief of Marshall's accounting analysis reports and property division in the Office of the Chief Financial Officer. He joined the Financial Management Office in 1963 and held various responsible accounting positions. Walker is survived by his wife Patricia Ann Walker, one daughter, three sons, one sister and six grandchildren.

Walker, Lewis, 83, Hartselle, died March 17. He retired from Marshall in 1973 where he worked as a supply clerk. He is survived by his wife Viola Walker.

Welzyn, John, 66, Huntsville, died March 7. He retired from Marshall in 1995 where he worked as a program analyst.

Wolfe, George, 72, Huntsville, died Jan. 22. He retired from Marshall in 1989 where he worked as a program analyst. He is survived by his wife Shirley Wolfe.

ZurBurg, Frederick, 63, Asheville, N.C., died Feb. 14. He retired from Marshall in 1988 where he worked as an aerospace engineer. He is survived by his wife Peggy ZurBurg.

Quality thinking

Products and services: What does our customer think?

by Tom Dollman

Do we really know what Marshall's customers think about the quality of the products and services we supply them?

There is a simple way to encourage and capture customer feedback on individual progress via the Quality Comment System (QUALCOMM). Marshall suppliers can print out and send to each customer a quality comment form to initiate. Some customers can access and initiate the forms directly through QUALCOMM. Suppliers should record a customer's verbal or written feedback via QUALCOMM. If a compliment or observation is made, it should be documented. If a complaint is lodged, it should be resolved and documented. This system is one of several "Hot Topics" available by clicking the rotating bar at "Inside Marshall," located at: http://inside.msfc.nasa.gov/INSIDE/

More details on the Corrective Action System are available in MSFC-P14.1-C01, "MSFC Quality Comment System," obtained from the ISO Document Library at: http://masterlist.msfc.nasa.gov/

To assure each Marshall customer is being provided quality products and services, the customer's perception of that quality should be documented regularly.

For more information, call Tom Dollman at 544-6568.

The writer works in the Technology Transfer Office.

Propulsion Workshop

Continued from page 1

" Through research and technology development we're starting to realize significant advances in space transportation that could reduce the travel time for a round-trip mission to Mars from a year to only a few months, or make it possible to explore the boundaries of our solar system," said Dr. George Schmidt, chief of the Marshall Propulsion Research and Technology Division.

"The Marshall Center has a mission to lead U.S. space transportation efforts in the new millennium," said Schmidt. "We believe propulsion technologies that will make it possible and affordable to explore and develop the space frontier will be developed here at Marshall."

Teledyne Brown

Continued from page 2

pressure gases and cryogenic liquids, including hydrogen and oxygen, are daily occurrences for Teledyne Brown. The company supplies high-pressure gases and cryogens throughout Marshall and to Propulsion Lab activities in the test areas.

"This continuous record is the result of paying attention to all details of our assignment, along with extensive training and periodic retraining to keep our personnel aware of their safety responsibilities," Britt said.

He said it is the firm's policy that an individual employee has an obligation to stop work if an unsafe condition exists, and that safety is taught as everyone's responsibility.

Exercise Facility

Continued from page 5

The Exercise Facility, along with the MARS Exchange and the Medical Center sponsor events such as the upcoming Health and Fitness Expo set for April 21 at Bldg. 4752. The Expo is from 10 a.m.-1 p.m. with a fitness walk beginning at 11 a.m.

Spring and summer hours for the Activities Building/Exercise Facility are Monday-Friday from 4:30 a.m.-7:30 p.m. except holidays when it closes at 5 p.m. Weekend hours are 7 a.m.-5 p.m. Staff hours for Clark are 7 a.m.-3:30 p.m.; and for Mirandy 9:30 a.m.-6 p.m.

For more information about the facility or its programs, call 4-3337.

Center Announcements

- ***Semiannual Bookfair —*** The semiannual Bookfair, sponsored by the NASA Exchange, will be held April 27-29 from 8 a.m.-4 p.m. in Bldg. 4203, room 1201. A selection of bestsellers, cookbooks, decorating, sports and children's books will be available for purchase at a savings. A continued feature will be the daily drawings at 11 a.m. and 2 p.m. to win a free book of your choice. If you have any questions, call the Exchange Office, 4-7564.
- ***Moonbuggy Volunteers —*** The Sixth Annual Great Moonbuggy Race will be held April 17 from 8:30 a.m.-6 p.m. Volunteers are needed for the morning shift beginning at 8:15 and afternoon shift beginning at 12:30. Possible volunteer positions include: obstacle judging, scorekeeping and reporting, start/finish line activities and prerace qualifying. Lunch and a T-shirt will be provided. For more information call Tammy Rowan at 544-8706.
- ***NARFE Meeting —*** The National Association of Retired Federal Employees (NARFE) will meet Saturday, 9:30 a.m. at the Senior Center on Drake Avenue. Bill Roberts of Morgan Stanley Dean Witter will discuss a variety of investment options, including bonds, certificates of deposit and investment trusts. For more information call 837-0382 or 881-3168.
- ***Environmental Awareness Month —*** April has been designated Environmental Awareness Month at Marshall. The 1999 Earth Day theme "Recycling Today Plants the Seeds for Tomorrow" helps us toremember what we do to our environment today will affect our children's and grandchildren's lives. By recycling today, we can help protect our children's environment and instill in our children the importance of taking care of their surroundings.
- ***Redstone Toastmasters —*** Sharpen your leadership skills and become a respected discussion leader. Visit and join Redstone Toastmasters which meets weekly on Tuesday at 6 p.m. in Morrison's Cafeteria at Madison Square Mall. For more information, call Joe Jones at 461-0476.
- ***AFGE Local 3434 —*** AFGE Local 3434 will hold its monthly meeting on Tuesday, April 13 from 11:30 - noon in Bldg. 4200, room P110. All members and nonmembers are invited.
- ***Emergency service for Marshall GSA Leased Vehicles —*** The motor pool will come out and use jumper cables or change a flat tire on all Marshall GSA-leased vehicles assigned to organizations. The user will then be responsible for taking the vehicle to GSA for followup repairs. For more information, call 544-4476.
- ***Blue Cross/Blue Shield —*** The federal representative from Blue Cross/Blue Shield will be at Marshall to assist employees on Wednesday, April 14 from 9-11 a.m. in Bldg. 4200, room 324.

Employee Ads

Miscellaneous

★ Lazyboy recliner couch, leather, burgundy, good condition, $700 obo. 539-3294 after 5:30 p.m

★ Yamaha jet ski, 85 hp, yellow and white, safety features, GP760, $4,900. 837-2461

★ Two softball gloves, $20; high quality large baseball catchers mitt, $50. 534-8186

★ Garage door opener, 1/2 hp, 2 remotes, $50. 883-4276

★ Computer, 90Mhz Pentium, 540Mb, 3xCD-ROM, 28.8K modem, ATI graphics card, Canon BJ-230 printer, 17" moniter, $550. 518-9260

★ Browning, Sitori, over and under, 12 gauge, $800. 837-0846

★ Exercise equipment, cross-country skier, Weslo Arch Skier Plus, folds for storage, $60. 830-4477

★ Circular rotating file system from doctor's office, four tiers, holds thousands of folders, $400. 533-1131

★ Mountain Lakes resort membership, $1,500 obo. 461-7022 evenings

★ Rifle stock for any Remington 700BDL, full aluminum bedding, fully adjustable, $100. 931-438-0476

★ Auto grease gun w/extra lithium cartridge $10; 14 good electron tubes, $10. 881-8648

★ Toro lawn mower, 21" blade, $95; Murray mower with bagger, $65. 883-6284

★ AQHA Golden Palomino broodmare, Doc's Sug/Cutter Bill bred, $2,850. 931-732-4742

★ Catcher's mitt, Louisville Slugger for a left hander, $70. 830-0866

★ Solid oak china cabinet, three leaded glass doors on top, lots of storage below, $800. 895-9520

★ Longaberger baskets, all 4 in Halloween series, $500 obo. 931-433-8200 after 6 p.m.

★ Forged iron patio furniture, round table, 4 chairs, black, $50 obo. 880-1544 after 6 p.m.

★ HP520 color printer, fax, copier, and scanner, $238; animal cage for van/station wagon, $25. 881-0040

★ Norinko SKS rifle, butt extender, muzzle, brake, cleaning kit, etc., $225. 837-0418

★ Sears 8-1/4 radial arm saw, $150; jogging stroller, $45; Evenflo carseat, $25; Graco stroll-a-bed, $40; radar detector, $35. 880-7305

★ Computer, Pionex, 486SX33MAG, 250MB HD, 2XCD, 5-1/2" floppy, 3-3/4" floppy, 28klbs. Modem, 15" monitor, $400. 883-9789

★ Spaulding pool table, regulation size, light oak finish, $650; Powertel Nokia phone, $50. 430-4074

★ Apple Mac 6200CD computer, 15" Apple monitor and Colorwriter 2400 printer, $425. 971-9710

★ Sears exercise bike, speedometer timer, $25. 883-2948

★ Tow hitch for Jeep Cherokee, Class 3 duty, complete assembly, $80. 837-0085

★ Australian shepherd, black, female, 12 months old. 881-5088

★ Mountain climber exerciser, $60; Sears exercise bike, $100; electronic keyboard w/stand, $40. 721-5609

★ 3-HP mower, $40. 721-0617

★ Adjustable (angle) roof-mounted basketball backboard w/hoop, $20. 464-5774

★ Solid oak china cabinet, and table w/4 chairs, $800. 859-8764

★ Four Indianapolis 500 tickets, Tower Terrace on pit row, face value, $300. 881-0533

Vehicles

★ 1995 Chevy van, white, 22K miles, leather, TV/VCR, headphones, rear stereo, dual air, one-owner, $18,500. 729-1672

★ 1989 Camaro convertible, red, V8, AC, power windows, cruise, new top, $5,200. 232-1274

★ 1992 Camaro, V6, AT, AC, new tires, 84K miles, $5,500. Pager 518-7544

★ 1991 Volkswagon Fox, 4-door, 4-speed, 74K miles, $1,900 obo. 837-0085

★ 1985 BMW 325e, 4-door, power sunroof, 5-speed, 170K miles, new wheels & tires, $2,800. 650-5208

★ 1997 Honda Civic DX, hatchback, 5-speed, 26K miles, black. 539-4335

★ 1990 Plymouth Voyager SE, 7-passenger, FM/AM, cassette, power locks, engine recently rebuilt, $2,500. 881-5237

★ 1997 Camry LE, black, 32K miles, leather, CD player, keyless security, alloy wheels, $16,500. 461-7920

★ 1983 GMC van, rebuilt motor, solid body, custom interior, $1,000. 721-5609

★ 1995 Suzuki Sidekick Limited, 45K miles, 5-speed, CD, new tires, bikini top, $6,995 negotiable. 859-8798

★ 1997 Honda Civic EX, 2-door, red, auto, all power, CD changer, moonroof, spoiler, 48K miles, $12,000. 464-5179

★ 1991 Toyota Celica GTS, HB, 5-speed, 92K miles, $6,200 negotiable. 883-8887

★ 1997 Chevy S-10 LS, step-side, air, AM/FM cassette, 5-speed, 4-cylinder, 34K miles, 28 mpg, $10,900. 534-6071

★ 1990 Chrysler Fifth Avenue, 129K miles, $3,100. 721-5531

★ 1987 Mazda 626 LX, 4-door, 5-speed, 135K miles, tilt, cruise, air, all power, white, $2,400. 721-9601

★ 1998 Nissan Frontier, automatic, 4-cylinder, air, cruise, 22K miles, silver, cloth bench seat, $10,900. 772-6816

Wanted

★ 1987 to 1992 Nissan or Toyota pickup truck. 883-7695

★ Recreational vehicle or pop-up trailer to rent for family vacation to Yellowstone, May 27-June 14. 881-1823

★ Automobile booster seat for 4-year-old. 828- 5879

Found

★ "Microgravity Science Glovebox" lapel pin still in package in south parking lot, Bldg. 4203. 4-9101

★ Roll of film at the Marshall picnic area during the Easter Egg hunt. Call 4-7511

Thank You...

Thanks so much for the many acts of kindness shown during my recent bout with breast cancer and the chemo treatments that followed. Thank you for all the prayers, cards, phone calls and the many hours of donated leave. God bless you all.

Gwen Haney, AP01

MARSHALL STAR
Vol. 39/No. 30

Marshall Space Flight Center, Alabama 35812
(256) 544-0030
http://www.msfc.nasa.gov

The Marshall Star is published every Thursday by the Internal Relations and Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Contributions should be submitted no later than Monday noon to the Marshall Internal Relations and Communications Office (CO40), Bldg. 4200, room 101. Submissions should be written legibly and include the originator's name. Send electronic mail submissions to: intercom@msfc.nasa.gov The Marshall Star does not publish commercial advertising of any kind.

Director of Internal Relations
and Communications — Norman Brown
Editor — Debra Valine

U.S. Government Printing Office 1999-733-111-80055

BULK RATE
Postage & Fees PAID
NASA
Permit No. G-27